

CLAIMS

1. A clamping device comprising a support member for supporting a member to be clamped at a predetermined position, a mounting member attached to the support member, a clamp arm attached to the mounting member to be able to reciprocate with respect to the mounting member, a pressure applying mechanism, which is located between the mounting member and the clamp arm and applies pressure to the clamp arm, and a clamp bolt, which is located on the clamp arm and clamps the member to be clamped between the clamp bolt and the support member, the clamping device being **characterized in that**,

a threaded cylinder having an external thread portion on the outside and an internal thread portion on the inside is attached to the clamp arm such that the height of the threaded cylinder is adjustable by utilizing the external thread portion, the clamp bolt is screwed to the internal thread portion of the threaded cylinder, and a manipulation portion is provided for rotating the clamp bolt in a state where the member to be clamped is clamped between the clamp bolt and the support member.

2. The clamping device according to claim 1, wherein a guide groove is formed in the clamp arm, and the threaded cylinder is adjustably attached to the guide groove.

3. The clamping device according to claim 2, wherein the threaded cylinder is inserted in the guide groove, a first lock nut and a second lock nut are screwed to the threaded cylinder to sandwich the clamp arm from above and below, and the threaded cylinder is secured at a predetermined position of the clamp arm by securely tightening the first lock nut and the second lock nut to the clamp arm.

4. The clamping device according to claim 3, wherein an upper washer is arranged between the clamp arm and the first lock nut and a lower washer is arranged between the clamp arm and the second lock nut, and the upper washer and the lower washer each has a rotation restricting rib for restricting rotation of the upper washer and the lower washer.

5. The clamping device according to claim 4, wherein the second lock nut is fixed to the lower surface of the lower washer.

6. The clamping arm according to claim 1, wherein the external thread portion of the threaded cylinder is screwed to an internal thread portion formed in the clamp arm, and a first lock nut and a second lock nut are screwed to the external thread portion to secure the threaded cylinder to the clamp arm.

7. The clamping device according to any one of claims 1 to 6, wherein an engaging hole is formed at an upper end of the clamp bolt, the engaging hole being engageable with the distal end of a wrench for rotational manipulation.

8. The clamping device according to any one of claims 1 to 5, wherein the upper washer and the lower washer are integrally formed with an upper portion and a lower portion of a tubular body, the tubular body being fitted to the clamp arm such that the position of the tubular body is adjustable along the clamp arm, and the tubular body is securely tightened to a side surface of the clamp arm with a bolt.

9. The clamping device according to any one of claims 1 to 5, wherein the pressure applying mechanism is a toggle mechanism.

10. The clamping device according to any one of claims 1 to 5, wherein a pad is located at the distal end of the clamp bolt, the pad abuts against an upper surface of the member to be clamped and permits the clamp bolt to rotate relative to the pad.

11. A clamping device comprising a support member for supporting a member to be clamped at a predetermined position, a mounting member attached to the support member, a clamp arm attached to the mounting member to be able to reciprocate with respect to the mounting member, a pressure applying mechanism, which is located between the mounting member and the clamp arm and applies pressure to the clamp arm, and a clamp bolt, which is located on the clamp arm and clamps the member to be clamped between the clamp bolt and the support member, the clamping device being characterized in that,

the crank bolt is provided on the crank arm such that the position of the crank bolt is adjustable along the crank arm, a manipulation portion is provided on the clamp bolt above the clamp arm, the manipulation portion being used for rotating the clamp bolt in a state where the member to be clamped is clamped between the clamp bolt and the support member.